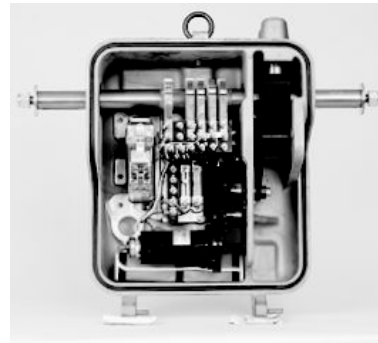


Model 95 Highway Crossing Gate Mechanism

ASTS USA's Model 95 Highway Gate Crossing Mechanism is the industry standard for simplicity, reliability, durability, ease of maintenance and value. It is completely reengineered from earlier models, meets or exceeds AREMA and other industry standards, and responds to customer requests for a state-of-the-art mechanism built with both safety and value in mind. The mechanism represents a leap into the use of modern techniques and materials. Its modular design features an uncluttered mechanism with fewer moveable parts. Each unit part can be easily accessed and replaced in the field if necessary, making the Model 95 simpler to service. Models are available for standard highway vehicle crossing locations, sites with pedestrian sidewalks, and ASTS USA's Four-Quadrant Gate System (see RSE-5A3).



General Description

Completely redesigned to meet or exceed AREMA and American Association of Highway Officials' specifications, the Model 95 Gate Mechanism is a compact, easily maintained device. It features a cast aluminum housing and cover and is driven by a highly efficient and durable gear motor. The result is a smaller, lighter unit that is extremely serviceable and stronger than other models. In fact, the Model 95 is 100 pounds (43 kg) lighter than previous mechanisms, yet has a stall torque of 2,000 foot-pounds (8896 Newtons). Other features of the Model 95 include heavy duty coil springs for vertical and horizontal dampeners; availability with vital or non-vital relay; capability of indefinite motor stall; and higher-strength gears. The Model 95 is designed for ease of installation and ease of maintenance, with convenient access to the gear train.

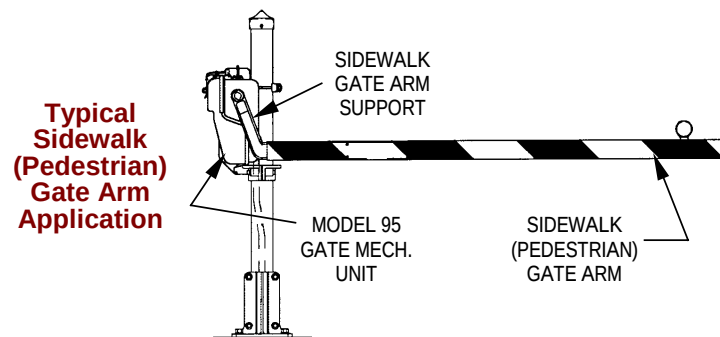
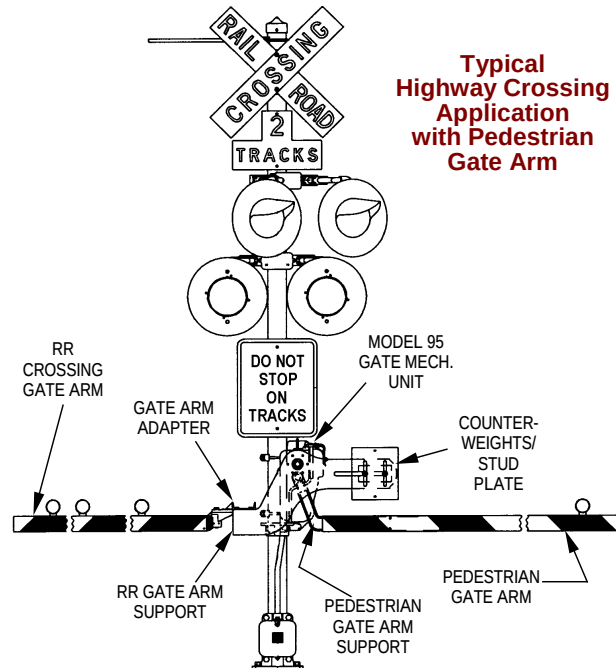
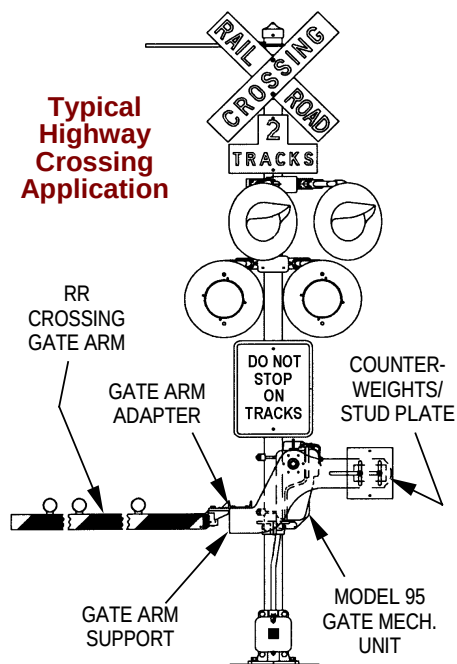
During development testing of the Model 95, the gear motor prototypes performed to expectations through more than 200,000 operations. At an average of 10 trains a day, that translates to more than 55 years of operation.

The Model 95 Gate mechanism has been adapted for a variety of applications including:

- Standard highway crossing entrance gate
- Highway crossing entrance combined with pedestrian (sidewalk) gate
- Pedestrian sidewalk-only
- Highway crossing "Four-Quadrant Gate" system with entrance and "Exit" gate mechanisms (see **RSE-5A3**)

Advantages

- Lightweight, compact design
- Completely re-engineered for increased durability and serviceability
- Easily removed and installed
- Fits 4-inch or 5-inch (10.2 cm or 12.7 cm) masts
- Capable of indefinite motor stall
- Self-restoring internal circuit breakers
- Cast aluminum housing



Advantages (cont'd)

- Available with vital or non-vital relays
- Highly efficient drive motor and gears
- Heavy duty horizontal and vertical buffers
- Built-in thermal and surge protection
- "Break-away" gate arm adapter
- Mechanisms with pedestrian and sidewalk crossing arms available
- Entrance and exit versions for ASTS USA Quad Gate System

Design Features

Housing and Gate Arm

The Model 95 features a 1-piece cast aluminum housing and light weight removable cover (vertically hinged). A heavy-duty spring steel hasp on the housing latches the cover to the housing and accepts any standard padlock. Mounting may be done on 4", 5" and 10" (10.2 cm, 12.7 cm and 25.4 cm) masts. Overall, the Model 95 is smaller and about one-third lighter than similar mechanisms. Standard gate arm assemblies are easily fastened and wired to the Model 95 drive shaft. A universal breakaway adapter on the arm joint includes shear pins and a right angle, fall-away hinge to control separation of the arm if it is hit by a motor vehicle.

Within the housing, the electrical assembly is plate-mounted so that all of the electrical components can be easily removed and replaced.

Model 95 Highway Crossing Gate Mechanism

Ansaldo STS USA
(Formerly known as Union Switch & Signal)

RSE-5A1
Rev. 3-09

Design Features (cont'd)

Gearing and Drive Motor

The Model 95 includes a 2-stage, high-strength gear reduction mechanism. Heavy duty damper springs on the main drive shaft prevent any gate arm backlash into the gear train. The Model 95 is driven by a compact but powerful permanent magnet gear motor that generates more torque than larger and heavier motors in use. Stall torque is 2000 ft./lbs. (8896 Newtons), a major improvement over the typical 1300 ft./lbs. (5783 Newton) rating of other gate mechanisms. Also, this motor is capable of moving the gate mechanism off balance with the gate arm missing. If needed, the motor shaft can also be hand cranked via a square shaft extension.

Motor Control Relay (MCR) contacts are used to control the drive motor. The unique snap-action contact design extends contact life, while helping to operate the mechanism more smoothly. The MCR is de-energized when the gate is clear; therefore none of the circuit controller contacts carry motor current.

The Model 95 incorporates a simplified hold-clear circuit using an electric brake. This device permits the gate to be locked in the upright position. The brake disengages and allows the arm to lower when a train approaches the gate mechanism.

The Model 95 also has built-in self-restoring internal circuit breakers for thermal and voltage protection, which guard the device from damage due to harsh weather conditions, electrical storms and surges. It is also resistant to overload damage from gate arm obstructions.

Electrical Controls

The Model 95 uses a dependable circuit controller that is easily accessed and designed to minimize contact burning. This allows for on-site operation with the gate arm missing. One adjustable resistor allows convenient setting of the arm descent speed.

Foundation Mounting

Standard pre-cast or poured concrete may be used as a foundation for the Model 95 Gate Mechanism (per AREMA guidelines). Bolt spacing is a standard 4-bolt pattern spaced 11-11/16" on centers for 5" junction box.

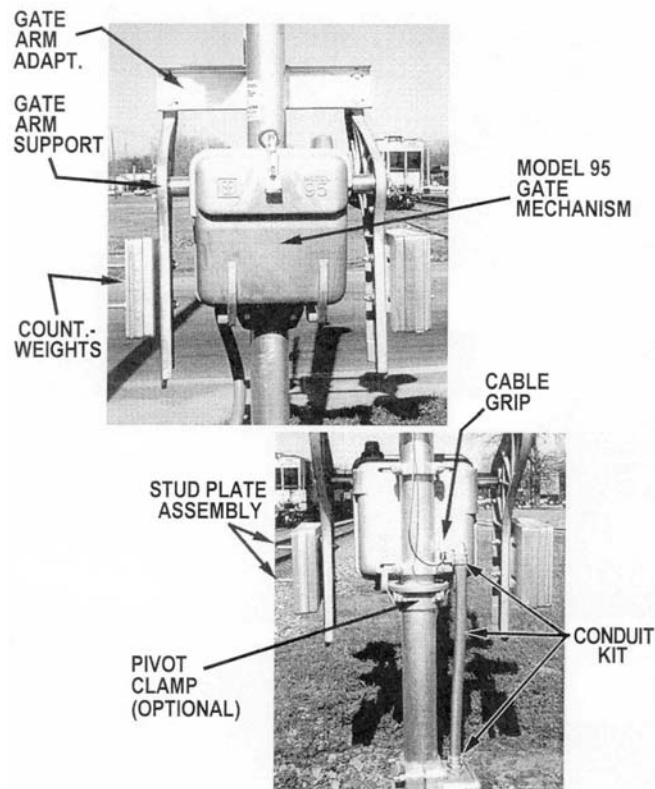
Additional Model 95 Applications

The Model 95 Pedestrian Gate Mechanism utilizes the same basic design as the standard highway crossing version, but is equipped with an additional 8 foot (2.4 m) arm for deployment over a pedestrian sidewalk adjacent to the highway. Both the main highway arm and the pedestrian arm deploy at the same time and same speed from the internal mechanism. Versions of this mechanism are available with vital or non-vital relay. Gate arm support hubs permit right-hand or left-hand placement of the pedestrian arm.

In addition to the complete Highway/Pedestrian assembly, ASTS USA provides several retrofit kits for converting an existing Model 95 crossing mechanism to include the pedestrian arm feature.

The Model 95 Sidewalk Gate mechanism is also based on the standard gate mechanism, but is only equipped with the 8 foot (2.4 m) pedestrian arm for locations where only a pedestrian sidewalk crosses the tracks. Left and right-hand arm versions are available with this assembly.

The Model 95 Exit Gate Mechanism is an integral part of ASTS USA's "Four-Quadrant Gate" system. This gate mechanism is mounted on the signals installed on the exit-side of the crossing (the side through which a motor vehicle must pass when leaving the crossing).



RSE-5A1
Rev. 3-09

Additional Model 95 Applications (cont'd)

It is designed to raise should power to the highway-crossing warning system fail, thus preventing a motor vehicle being trapped on the crossing by a down gate blocking the crossing location's exit-side lane. Refer to **RSE-5A3** for additional details.

Specifications

Dimensions:	23" H x 21"W x 13-3/4"D (58.4 cm H x 53.3 cm W x 34.9 cm D)
Weight:	185 lbs (83.9 kg). with cover, 160 lbs. (72.6 kg) without cover
Mounting:	4", 5" and 10" " (10.2 cm, 12.7 cm and 25.4 cm) pipe masts
Handling:	Eyebolt for lifting
Motor Voltage:	12 Vdc or 24 Vdc
Motor Current:	15.0 A
Motor Stall Torque:	2000 ft./lbs. (8896 Newtons)
Hold Clear:	12 Vdc unit: 150 to 160 mA 24 Vdc unit: 185 mA
Ckt. Breaker:	12 Vdc unit: 20A 24 Vdc unit: 10A
Ckt. Brkr. Open Time:	100% of load rating for 1 hour 125% of load rating for up to 1 hour 200% of load rating within 1 minute

Specifications (cont'd)

Ckt. Breaker Reset:	Within 1 minute to several minutes
Heater:	25W resistive element Voltages: 24V, 120V, 240V
Motor Relay:	PN-150HD vital plug-in (see RSE-4E2) or non-vital

Ordering Information

- Refer to ordering tabulation below and on page 5 to order the following Model 95 items:
 - Standard highway crossing entrance mechanism
 - Highway crossing mechanism with pedestrian (sidewalk) gate arm
 - Pedestrian (sidewalk) gate mechanism only
- If replacing a non-ASTS USA gate mechanism with the Model 95, gate arm supports must be ordered.
- Model 95 Exit Gate Mechanism only available as part of "Quad Gate" system; contact your ASTS USA Account Executive for details and any other special equipment configurations required.
- Request Service Manual SM-6495 for highway, pedestrian and sidewalk gate mechanism replacement parts.
- Refer to **RSE-5A2** for various Model 95 Gate Mechanism installation, upgrade and retrofit assemblies:

Model 95 Crossing Gate Mechanisms					
Order No.	Relay Type	Motor	3-Wire Control	120 Vac Heater	Maint. Switch (1)
N46780101	Non-Vital	12 Vdc	--	--	--
N46780102	Non-Vital	24 Vdc	--	--	--
N46780105	Non-Vital	12 Vdc	--	X	--
N46780106	Non-Vital	12 Vdc	--	X	X
N46780108	Non-Vital	12 Vdc	--	--	X
N46780201	Vital	12 Vdc	--	--	--
N46780202	Vital	24 Vdc	--	--	--
N46780204	Vital	12 Vdc	X	--	--
N46780206	Vital	12 Vdc	--	--	X
Note (1): See RSE-5A2 for description.					

Model 95 Highway Crossing Gate Mechanism

Ansaldo STS USA
(Formerly known as Union Switch & Signal)

RSE-5A1
Rev. 3-09

Ordering Information (cont'd)

Model 95 Sidewalk Gate Mechanisms					
Order No.	Relay Type	Left or Right Hand	3-Wire Control	120 Vac Heater	Maint. Switch (1)
N46780103	Non-Vital	R.H.	--	--	--
N46780104	Non-Vital	L.H.	--	--	--
N46780109	Non-Vital	R.H.	--	X	--
N46780110	Non-Vital	L.H.	--	X	--
N46780111	Non-Vital	R.H.	--	X	X
N46780112	Non-Vital	L.H.	--	X	X
N46780107	Vital	--	X	--	--
N46780205	Vital	R.H.	X	--	--
N46780207	Vital	R.H.	--	--	--
N46780208	Vital	L.H.	--	--	--
N46780209	Vital	R.H.	--	X	X
N46780210	Vital	L.H.	--	X	X
Note (1): See RSE-5A2 for description.					

Model 95 Pedestrian Gate Mechanisms (Highway and Sidewalk Crossings in same unit)				
Order No.	Relay Type	120 Vac Heater	Maint. Switch (1)	Notes
N46780301	Non-Vital	--	--	--
N46780302	Non-Vital	X	--	--
N46780304	Non-Vital	--	--	(2)
N46780305	Non-Vital	X	X	--
N46780401	Vital	--	--	--
N46780402	Vital	X	--	--
N46780403	Vital	--	--	(2)
N46780405	Vital	X	X	--
Note (1): See RSE-5A2 for description.				
Note (2): With upgrade option (see description).				

Model 95 Exit Gate Mechanisms				
Order No.	Relay Type	Mode	120 Vac Heater	Timer
N46710401	Non-Vital	Fail Up	--	--
N46710402	Vital	Fail Up	--	--
N46710406	Non-Vital	Fail Up	X	X

